WHAT IS CLAIMED IS:

1. A friction stir welding method comprising the steps of:

preparing (a) a first member having a first part and a raised portion, protruding beyond said first part from one side in a direction of thickness of the first member, said raised portion being at an end part of said first member, and (b) a second member to be welded to said first member, said first part of said first member having a surface and said second member having a surface, said raised portion having a length extending from an end of said first member, at said end part, to an exposed surface of said first part of said first member;

abutting said first member, where said raised portion of said first member is located, against said second member to be welded to each other, to provide an abutting portion; and

friction stir welding said first member and said second member to be welded from a side of said raised portion of said first member,

said friction stir welding being performed by moving a rotary tool along said abutting portion of said first member and said second member,

said rotary tool being at said side of said raised portion of said first member, said rotary tool having a first portion of a first diameter, and having a second portion of a second diameter smaller than said first diameter and a second radius, said second radius, of said second portion, being smaller than said length of said raised portion,

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and during

said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

2. A friction stir welding method according to Claim 1, wherein said surface of said first part of said first member is substantially coplanar with said surface of said second member.

3. A friction stir welding method according to claim 1,

wherein the second member also has a first part and a raised portion, said raised portion of said second member protruding beyond said first part of said second member in a direction of thickness of said second member, at an end part of said second member, said raised portion of the second member having a length extending from an end of said second member, at said end part of said second member, to an exposed surface of said first part of said second member;

wherein in said abutting said raised portion of said first member is abutted against said raised portion of said second member, to provide said abutting portion;

wherein in said friction stir welding said first member and said second member are to be welded from the side of said raised portion of said first member and said raised portion of said second member, and said rotary tool

is at said side of said raised portion of said first member and at said side of said raised portion of said second member;

wherein said second radius, of said second portion of said rotary tool, is smaller than said length of said raised portion of said second member;

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and said raised portion of said second member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and said first part of said second member; and

wherein during said friction stir welding material of said raised portion of said first member and of said raised portion of said said second member fill said any gaps.

4. A friction stir welding method comprising the steps of:

preparing (a) a first member having a first part and a raised portion, protruding beyond said first part from one side in a direction of thickness of said first member, said raised portion being at an end part of said first member, and (b) a second member to be welded to said first member, said first part of said first member having a surface and said second member having a surface;

abutting said first member, where said raised portion of said first member is located, against said second member to be welded to each other, to provide an abutting portion; and

friction stir welding said first member and said second member to be welded from a side of said raised portion of said first member,

said friction stir welding being performed by moving a rotary tool along said abutting portion of said first member and said second member,

said rotary tool being at said side of said raised portion of said first member, said rotary tool having a first portion of a first diameter and a second portion of a second diameter smaller than said first diameter,

wherein during introduction of said second portion of said rotary tool into said first member, for said friction stir welding, all of said second portion of said rotary tool contacts said raised portion of said first member,

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

5. A friction stir welding method according to Claim 4, wherein said surface of said first part of said first member is substantially coplanar with said surface of said second member.

6. A friction stir welding method according to claim 4,

wherein the second member also has a first part and a raised portion, said raised portion of said second member protruding beyond said first part of

said second member in a direction of thickness of said second member, at an end part of said second member;

wherein in said abutting said raised portion of said first member is abutted against said raised portion of said second member, to provide said abutting portion;

wherein in said friction stir welding said first member and said second member are to be welded from the side of said raised portion of said first member and said raised portion of said second member, and said rotary tool is at said side of said raised portion of said first member and at said side of said raised portion of said second member;

wherein during introduction of said second portion of said rotary tool, for said friction stir welding, all of said second portion of said rotary tool contacts said raised portion of said first member and said raised portion of said second member;

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and said raised portion of said second member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and said first part of said second member; and

wherein during said friction stir welding material of said raised portion of said first member and of said raised portion of said second member fills said any gaps.

7. A friction stir welding method, performed:

by abutting a first member and a second member, to provide an abutted portion of said first and second members,

wherein, at said abutted portion, an end portion of said first member has a raised portion which protrudes in a thickness direction of said first member, said raised portion having a length, said first member having a first part and said raised portion which extends beyond said first part; and

by inserting a rotary tool into said abutted portion from a side of said raised portion of said first member and carrying out a friction stir welding of said abutted portion,

said rotary tool having a first portion of a first diameter, and having a second portion of a second diameter smaller than said first diameter and a second radius, said second radius being less than said length of said raised portion of said first member,

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

8. A friction stir welding method according to Claim 7, wherein a surface of said first part of said first member is substantially coplanar with a surface of said second member.

9. A friction stir welding method according to Claim 7,

wherein, at said abutted portion, an end portion of said second member also has a raised portion which protrudes in a thickness direction of said second member, said raised portion of said second member having a length, said second member having a first part and said raised portion which extends beyond said first part;

wherein said rotary tool is inserted into said abutted portion from a side of both said raised portion of said first member and said raised portion of said second member;

wherein said second radius, of said second portion of said rotary tool, is also less than said length of said raised portion of said second member;

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and in said raised portion of said second member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said first part of said second member; and

wherein during said friction stir welding material of the raised portion of said first member and material of the raised portion of said second member fills said any gaps.

10. A friction stir welding method, performed:

by abutting a first member and a second member, to provide an abutted portion of said first and second members,

wherein, at said abutted portion, an end portion of said first member has a raised portion which protrudes in a thickness direction of said first member, said first member having a first part and said raised portion which extends beyond said first part of said first member; and

by inserting a rotary tool into said abutted portion from a side of said raised portion of said first member and carrying out a friction stir welding of said abutted portion,

said rotary tool having a first portion of a first diameter and a second portion of a second diameter smaller than said first diameter,

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member,

wherein during said inserting all of said second portion of said rotary tool contacts said raised portion prior to extending into said first part of said first member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

11. A friction stir welding method according to Claim 10, wherein a surface of said first part of said first member is substantially coplanar with a surface of said second member.

12. A friction stir welding method according to Claim 10,

wherein, at said abutted portion, an end portion of said second member has a raised portion which protrudes in a thickness direction of said second member,

said second member having a first part and said raised portion which extends beyond said first part of said second member;

wherein said rotary tool is inserted into said abutted portion from a side of both said raised portion of said first member and said raised portion of said second member;

wherein during said friction stir welding said second portion of said rotary tool is positioned in said raised portion of said first member and in said raised portion of said second member, and during said friction stir welding

said second portion of said rotary tool is positioned in said first part of said first member and in said first part of said second member;

wherein during said inserting all of said second portion of said rotary tool contacts said raised portion of said first member and said raised portion of said second member prior to extending into said first part of said first member and said first part of said second member; and

wherein during said friction stir welding material of the raised portion of said first member and material of the raised portion of said second member fills said any gaps.

13. A friction stir welding method comprising the steps of:

preparing (a) a first member having a first part and a raised portion, protruding beyond said first part from one side in a direction of thickness of said first member, at an end part of said first member, and (b) a second member to be welded to said first member, said first part of said first member having a surface and said second member having a surface;

abutting said first member, where said raised portion of said first member is located, against said second member to be welded to each other, to provide an abutting portion; and

friction stir welding said first member and said second member to be welded from a side of said raised portion of said first member,

said friction stir welding being performed by moving a rotary tool along said abutting portion of said first member and said second member,

said rotary tool being at said side of said raised portion of said first member, said rotary tool having a first portion of a first diameter and a second

portion of a second diameter smaller than said first diameter, said second portion of said rotary tool having an outer periphery,

wherein during introduction of said second portion of said rotary tool into said first member, for said friction stir welding, the outer periphery of said second portion of said rotary tool is within a periphery of said raised portion of said first member,

wherein during said friction stir welding said outer periphery of said second portion of said rotary tool is positioned within said periphery of said raised portion of said first member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

14. A friction stir welding method according to Claim 13,

wherein the second member also has a first part and a raised portion, said raised portion of said second member protruding beyond said first part of said second member in a direction of thickness of said second member at an end part of said second member, said raised portion of said second member having a periphery;

wherein in said abutting said raised portion of said first member is abutted against said raised portion of said second member, to provide said abutting portion;

wherein in said friction stir welding said first member and said second member are to be welded from the side of said raised portion of said first member and said raised portion of said second member, and said rotary tool is at said side of said raised portion of said first member and at said side of said raised portion of said second member;

wherein during introduction of said second portion of said rotary tool, for said friction stir welding, said outer periphery of said second portion of said rotary tool falls within said periphery of said raised portion of said first member and said periphery of said raised portion of said second member;

wherein during said friction stir welding said second portion of said rotary tool is positioned within said periphery of said raised portion of said first member and within said periphery of said raised portion of said second member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and said first part of said second member; and

wherein during said friction stir welding material of said raised portion of said first member and of said raised portion of said said second member fills said any gaps.

15. A friction stir welding method, performed:

by abutting a first member and a second member, to provide an abutted portion of said first and second members,

wherein, at said abutted portion, an end portion of said first member has a raised portion which protrudes in a thickness direction of said first

member, said first member having a first part and said raised portion which extends beyond said first part of said first member; and

by inserting a rotary tool into said abutted portion from a side of said raised portion of said first member and carrying out a friction stir welding of said abutted portion, said rotary tool having a first portion of a first diameter and a second portion of a second diameter smaller than said first diameter, said second portion of said rotary tool having an outer periphery,

wherein during said friction stir welding said outer periphery of said second portion of said rotary tool is positioned within a periphery of said raised portion of said first member and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said second member,

wherein, during said inserting, said outer periphery of said second portion of the rotary tool is within said periphery of said raised portion of said first member prior to extending into said first part of said first member, and

wherein during said friction stir welding material of said raised portion of said first member fills any gaps, between said first member and said second member, which exist when said first member abuts said second member.

16. A friction stir welding method according to Claim 15,

wherein, at said abutted portion, an end portion of said second member has a raised portion which protrudes in a thickness direction of said second member, said raised portion of said second member having a periphery, said

second member having a first part and said raised portion of said second member which extends beyond said first part of said second member;

wherein said rotary tool is inserted into said abutted portion from a side of both said raised portion of said first member and said raised portion of said second member;

wherein during said friction stir welding said outer periphery of said second portion of said rotary tool is within said periphery of said raised portion of the first member and said periphery of said raised portion of said second member, and during said friction stir welding said second portion of said rotary tool is positioned in said first part of said first member and in said first part of said second member;

wherein during said inserting said outer periphery of said second portion of said rotary tool is within said periphery of said raised portion of said first member and within said periphery of said raised portion of said second member; and

wherein during said friction stir welding material of said raised portion of said first member and of said raised portion of said said second member fills said any gaps.